REMARKS/ARGUMENTS

Claims 56-101 remain pending in the instant application. Favorable reconsideration is kindly requested.

Drawings

The Office Action objects to the drawings as failing to show (a) "a non-uniform quadrality"; (b) "at least four different regions"; (c) the excluded first or second orthogonal directions transverse to the mean streamwise flow; and (d) the direction of the mean streamwise flow. Applicant respectfully submits that pictorial reference to first or second orthogonal directions is unnecessary because the claim as amended excludes those, and does not claim them. In addition, the drawings indicate a direction of mean streamwise flow through the duct at several locations, for example, Figure 2, reference 4 and 904, which reference pair is reiterated at several places throughout the drawings.

However, in order to advance prosecution, and without acquiescing in the proprietary of the objection, independent claim 56 is amended above to remove reference to a non-uniform quadrality having at least four different regions.

Therefore, Applicant respectfully submits that the objection has been obviated, and kindly requests favorable reconsideration and withdrawal.

Rejection Under 35 U.S.C. § 112

Claims 56-59, 65-83 and 96-100 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. Specifically, the Office Action avers that there is inadequate support in the specification for "a means steamwise flow, excluding a first or second orthogonal direction transverse to the mean streamwise flow, and a non-uniform distribution comprising at least a non-uniform quadrality having at least four different regions along the curvilinear path along the contractor surface".

The test for written description is not *ipsis verbis* test. *Martin v. Johnson*, 434 F.2d 746 (CCPA 1972); MPEP §2163 (II)(A)(3)(a). The specification need only "describe the claimed invention so that one skilled in the art can recognize what is claimed." *University of Rochester v. G.D. Searle & Co., Inc.*, 358 F.3d 916 (Fed. Cir. 2004). For example, as referenced above, the disclosure at Figures 2 and 7-13, for example, and their accompanying description, provide

adequate support for one of ordinary skill in the art to recognize a mean streamwise flow.

However, and without acquiescing in the proprietary of the rejection, independent claim 56 is amended above to strike the clauses that are the basis for the rejection. Therefore, Applicant respectfully submits that this aspect of the rejection has been obviated. Therefore, Applicant respectfully submits that the rejection has been obviated, and kindly solicits favorable reconsideration and withdrawal.

Rejection Under 35 U.S.C. § 102

Claims 56-59, 70-76, 78-82 and 96-100 are rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,859,071 to Woilles, et al. ("Woilles"). Applicant respectfully traverses the rejection, for at least the following reasons.

As amended above, claim 56 recites, *inter alia*, along a first curvilinear direction along, or circumferentially about the elongated contactor surface, at least one of the distribution of orifice spatial locations is systematically varied; the distribution of orifice size is systematically varied; and the distribution of orifice orientation, relative to the circumferential direction of the elongated fluid contactor, is systematically varied. This amendment is fully supported in the original specification as filed, for example, see Figures 7-11, 17, 21 or 23, and their associated description.

Claim 56 is further amended to clarify the relevant direction along the contactor surface, stating "along a first curvilinear direction along, or circumferentially about, the elongated contactor surface". These characteristics are disclosed in the original specification as filed, for example at Figs. 9-11 ("along"), and Figs. 2, 23 ("circumferentially about"). No new matter has been added.

In contrast to amended claim 56, each of the orifice distributions according to Woilles is characterized by its uniformity. For example, with reference to Figure 2, orifices 20 and 22 are each opposing one another and are uniformly distributed around the circumference of their respective manifolds 10, 12. Additionally, the angles of these orifices 20, 22 are also uniform with respect to their radial orientation and the incoming flow through the duct 2. Similarly, advanced manifold 14 with corresponding orifices 26 are also uniformly oriented along the length of the manifold radially inward and with respect to their relationship with both manifold 26 and the fluid flow through the duct 2.

Therefore, Woilles neither discloses nor suggests the systematic variance of orifice spatial location, size or orientation, as recited in independent claim 56. Applicant respectfully submits that the claim is patentably distinguished over Woilles, and kindly requests favorable reconsideration and withdrawal.

The Federal Circuit has recently reiterated the strict novelty requirement for anticipation, holding "Because the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements 'arranged as in the claim.' " *Net MoneyIN, Inc., v. Verisign, Inc.*, 545 F.3d 1359, 88 U.S.P.Q.2d 1751 (Fed. Cir., 2008)

Therefore, Applicant respectfully submits that claim 56 is patentably distinguished over Woilles. Claims 57-59, 70-76, 78-82 and 96-98 each depend, either directly or indirectly, from independent claim 56, and incorporate the features of claim 56 by reference. These dependent claims are each separately patentable, but in the interest of brevity they are offered as patentable for at least the same reasons as their underlying independent base claim. Therefore, Applicant respectfully submits that the rejection has been obviated, and kindly requests favorable reconsideration and withdrawal.

Rejection Under 35 U.S.C. § 103

Claims 68-69, 77 and 83 are rejected under 35 U.S.C. § 103(a) as obvious over Woilles in view of taken alone. Claims 65-67 are rejected under 35 U.S.C. § 103(a) as obvious over Woilles in view of U.S. Patent Application Publication No. 2003/0086333 by Tsouris, et al. ("Tsouris") and U.S. Patent No. 3,570,513 to Paine ("Paine"). Applicant respectfully traverses the rejections, for at least the following reasons.

Claims 65-69, 77 and 83 each depend, either directly or indirectly, from independent claim 56, and incorporate the features of claim 56 by reference. Even presuming, *arguendo*, that the proposed modification to Woilles were within the level of ordinary skill in the art proposed in the Office Action, and that Tsouris and/or Paine teach all that is attributed to them, and further presuming that there is some objective apparent reason to modify Woilles as proposed in the Office Action, Applicant respectfully submits that the claims are nonetheless patentably distinguished. Neither the proposed modification of Woilles in view of no reference, nor the proposed combination with Tsouris and/or Paine, ameliorates the underlying deficiency of

Woilles with respect to claim 56 as noted above.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Therefore, while these dependent claims are each separately patentable, in the interest of brevity they are offered as patentable for at least the same reasons as their underlying independent base claim 56. Therefore, Applicant respectfully submits that the rejection has been obviated, and kindly requests favorable reconsideration and withdrawal.

New Claims

New claims 101-102 are presented. These claims depend from claim 56. Claim 101 further recites the orifice angle of attack to the second fluid flow path being non-uniform. This feature is fully supported in the original specification as filed, for example at Figs. 2-4 and their associated description, *inter alia*. No new matter has been added.

Looking the features of claim 101, this claim is submitted as further patentably distinguished over Woilles, alone or in combination with Tsouris and/or Paine. Woilles discloses that the nozzles 20, 22 or 24 all share a common angle of attach with respect to flow direction through the pip 2. That is, the angle formed between the direction of flow through the pipe and the direction of the orifice. On the other hand, Applicant's disclosure details that alteration of angle of attack with respect to the flow of second fluid through the duct influences the depth of penetration of the first fluid into the second fluid flow, who also affect the evaporation or mixture of the first fluid into the second fluid. Neither these features and/or effects, nor the structural variations to achieve them, are taught or suggested by Woilles, taken alone or in combination with Tsouris and/or Paine.

With respect to claim 102, and referencing for example Figs. 21, 23, the claim recites that the systematic variation of orifice characteristics is progressive. As an example of the subset of progressive variation, see Fig. 9, as compared with Fig. 10 which exhibits a systematically alternating size distribution. This structure is likewise patentably distinguished over Woilles, taken alone or in combination with Tsouris and/or Paine.

Conclusion

In light of the foregoing, Applicant respectfully submits that all claims are patentable, and kindly solicits an early and favorable Notice of Allowability.

THIS CORRESPONDENCE IS BEING SUBMITTED ELECTRONICALLY THROUGH THE PATENT AND TRADEMARK OFFICE EFS FILING SYSTEM ON November 10, 2009.

DJT:lf

Respectfully submitted,

David J. Torrente

Registration No.: 49,099
OSTROLENK FABER LLP
1180 Avenue of the Americas
New York, New York 10036-8403
Telephone: (212) 382-0700